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August 31, 2017 17:00 ET

HURRICANE HARVEY MANAGEMENT REPORT

Information contained in this report reflects HQ and regional reporting from the most recently completed operational period as well as other reports provided by HQ, regional and interagency sources.

Executive Summary

Hurricane Harvey made landfall at 2300 ET, August 26th, as a Category 4 storm near Rockport, Texas. Harvey was downgraded to a Category 1 with maximum sustained winds of 85 mph and located approximately 25 miles southwest of Victoria, TX by 0700 on August 27th and moving northwest at 6 mph. Harvey stalled over southeastern TX through the middle of the week. Due to the slow motion of Harvey and a prolonged period of onshore flow, water levels remain elevated. The impacted area received more than 50 inches of precipitation, and catastrophic flooding occurred. Harvey was eventually downgraded to a tropical storm with maximum sustained winds of 45 mph.

Tropical Storm Harvey was located about 5 miles west of Cameron, Louisiana moving northeast at 7 mph with maximum sustained winds of 45 mph. On the forecast track, the center of Harvey will move across the lower Mississippi Valley and Tennessee Valley through August 31st. Harvey is expected to produce additional rainfall accumulations of 3 to 6 inches from southwestern Louisiana and the adjacent border of eastern Texas northeastward into western Kentucky through September 1st, with isolated amounts up to 10 inches. While the threat of heavy rains has ended in the Houston and Galveston area, catastrophic and life-threatening flooding will continue in and around Houston eastward into southwestern Louisiana for the rest of the week of August 28th.

The expected heavy rains spreading northeastward from Louisiana into western Kentucky may also lead to flash flooding and increased river and small stream flooding. Catastrophic and life-threatening flooding continues in southeastern Texas and portions of southwestern Louisiana. A Storm Surge Warning is in effect for Holly Beach, Louisiana to Morgan City, Louisiana. A Storm Surge Watch is in effect for east of High Island, Texas to west of Holly Beach, Louisiana. A Tropical Storm Warning is in effect for east of High Island, Texas to Grand Isle, Louisiana.

Arkema Chemical Explosion:

On August 31st, at approximately 0345 ET, two explosions were reported at the Arkema Chemical Facility located in Crosby. Arkema is a Risk Management Plan (RMP) facility. It manufactures liquid organic peroxides and two substances, sulfur dioxide (anhydrous) and 2-methylpropene are present at, or above, the minimum threshold quantity for RMP applicability. There have been no accidental off-site releases of applicable RMP chemicals from the facility in the previous five years.

According to local responders one of the eight refrigerated trailers on site auto-ignited and is burning. Officials had warned that the plant could explode after its coolant system for the organic peroxide tanks and backup generators failed due to damage from Tropical Storm Harvey. Flooding prevented repairs from being made. Employees evacuated the facility on August 29th and an evacuation order was established for residents within a 1.5 mile-radius of the facility on August 30th. As of this morning, no injuries were reported. Poison Control Centers are set up in TX to help citizens who have health concern questions concerning the Arkema facility or other flood-related health questions. EPA deployed an On-Scene Coordinator (OSC) to the scene and other EPA emergency response personnel in TX are in direct contact with first responders in Harris County and are providing federal assistance and resources.

Harris County Office of Homeland Security and Emergency Management is conducting air monitoring in the area. The Harris County Fire Department is maintaining a 1.5-mile evacuation order around the facility. Poison Control Centers are set up in TX to help citizens who have health concern questions concerning the Arkema facility or other flood-related health questions.

As of August 30th, EPA Airborne Spectral Photometric Environmental Collection Technology (ASPECT) aircraft did not detect any vapors or thermal abnormalities. ASPECT has been deployed again today to provide near real-time information to the OSC. EPA is also sending additional air monitoring personnel and equipment to augment the current effort of the state and local first responders. Monitoring teams from the Houston area are expected on-scene this morning.

Conoco Phillips Oil Spill:

The Conoco Phillips facility in Cuero, TX reported a 316 bbl oil spill due to Harvey. The spill has impacted Denton Creek. And an emergency response team is responding out of the Corpus Christi Incident Command Post.

Disaster Declarations Issued:

- On August 25th, a major disaster declaration was issued for the state of TX for Hurricane Harvey.
 - An additional 14 counties were added this morning
- On August 28th, an emergency declaration was issued for the state of Louisiana for Tropical Storm Harvey.

Region 6:

The Region 6 REOC is currently activated and is working under a limited Emergency Support Function (ESF) 10 FEMA Mission Assignment (MA). In addition, Region 6 has received an MA to assist the State of Texas with drinking water, wastewater, and Hazmat recovery operations. This MA for almost \$8.6 million added 184 EPA and Coast guard (CG) personnel to the Texas Commission on Environmental Quality (TCEQ) Harvey response in Corpus Christi, Houston, and surrounding impacted areas. An additional MA for \$20,000 has been issued to deploy EPA employees to various locations which include but are not limited to the Texas EOC and the Denton RRCC to support response operations.

Regional Mission Assignments:

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Mission Assignment Number	Funding Amount	Description of Assignment
MA4332DRTX3	\$8,592,000	R6 Field Ops incl. assessing drinking & waste water infrastructure, implementation of Response Manager tracking system, response to hazardous substances & oil discharges or releases.
MA4332DRTX1	\$20,000	Deployment of EPA to various locations, including but not limited to Texas EOC and the Denton RRCC to support response operations.
Total Funds	\$8,612,000	

Headquarters Mission Assignments:

Mission Assignment Number	Funding Amount	Description of Assignment
MA4332DRTX1	\$20,000	FEMA HQ ESF-10 Desk Support
Total Funds	\$20, 000	

Region 6 deployed two OSCs on August 25th. One OSC deployed to the FEMA Regional Response Center in Denton, Texas and the second OSC to the State of Texas Operations Center in Austin, Texas.

EPA Headquarters:

The HQ EOC activated at 0900 on August 28th and is at Level 1 operations in support of the Region 6 response to Tropical Storm Harvey. The HQ EOC is coordinating on several levels with Region 6 and other Federal agencies. The HQ EOC has deployed personnel to the FEMA NRCC to staff the ESF #10 watch. EPA Senior Management that comprise the Policy Coordinating Committee (PCC) is in the process of drafting senior management objectives that will form the basis of field strategy and tactics in response to Harvey.

National Incident Management Team (N-IMAT):

EPA has activated the N-IMAT consisting of highly skilled response personnel from Regions 3, 4, and 5 to advise and assist R6 with response activities. Members of the N-IMAT arrived in Dallas on August 29 and are integrated into the Incident Management Team structure.

Criminal Investigation Division (CID):

EPA's Criminal Investigation Division (CID) is sending 25 special agents as a Quick Reaction Team (QRT) to south TX to support the response to

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Harvey. The response is managed as part of the MA under ESF-13. Currently QRTs are being deployed to provide law enforcement support search and rescue operations, medical assistance teams and mortuary teams during the initial response phase of the response to Harvey. The EPA CID QRT is anticipated to be deployed September 1st, to the affected area for approximately one week.

State, Local and other Federal Agency Actions:

On August 30th, Four National Incident Management Team members traveled to Corpus Christi to establish the Unified Command Center. EPA Region 6, TCEQ, Texas General Land Office (TGLO), and Coast Guard are operating in Unified Command. On August 30th, the Unified Command will have seven teams in the field conducting reconnaissance. The teams will consist of personnel from Region 6, TCEQ, Civil Support Corps, and a CG strike team.

Number of R6 Personnel Involved:

Personnel	EPA R6 Dallas, TX	FEMA Denton, TX	Texas SOC Austin, TX	TCEQ Austin, TX	Houston, TX	Corpus Christi, TX	Totals
R6	39	1	1	10		9	60
START	5			1	1	5	12
IT Contractor	1					2	3
TOTAL	45	1	1	11	1	16	75

Number of HQ Personnel Involved in the EOC:

Personnel	OAR	OCFO	OCSPP	OEI	OLEM	OP	OW	Totals
Employees	2	0	0	2	6	1	2	13
Contractors	0	0	0	1	2	0	0	3
TOTAL	2	0	0	3	8	1	2	16

Other EPA Response Activities**EPA Laboratory/Analytical Services:**

EPA's aerial assessment aircraft, ASPECT, deployed to assess the conditions at the Arkema chemical facility in Crosby. EPA's Trace Atmospheric Gas Analyzer (TAGA) vehicle is en route from North Carolina to assist with air monitoring in the impacted areas and is scheduled to arrive by September 1st. EPA's Portable High-Throughput Integrated Laboratory Identification System (PHILIS) units are en route from Denver to the Corpus Christi area and are anticipated to arrive on September 1st. The mobile laboratory will be used to process environmental samples.

EPA's Houston laboratory is reporting that they will be closed until September 5. The laboratory and office building are not damaged. Region 6 has back up capabilities for laboratory services should the Houston facility remain closed. The mobile laboratory and response vehicles are secure and may be deployed when road conditions allow.

On August 28, Region 6 participated in an ESF-10 call with LA Department of Environmental Quality (LDEQ). LDEQ Southwest Regional office reported localized flooding particularly around Cameron Parish and the Lake Charles/Sulphur area. LDEQ reports that there are no boil water notices currently in the state.

Industrial Sources:

Region 6 is working with TCEQ to contact industrial sources within the impacted area to determine their operational status and determine what support can be provided with the monitoring of the start-up of industrial sources along the coastal area of TX. Exxon's oil refinery near Houston has reported suffered damage from Harvey.

On August 29th, TCEQ reported that Valero's Corpus Christi refinery had planned to begin start-up operations, running at 60% capacity until approximately September 3rd.

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Drinking Water/Wastewater Assessments:

The Region 6 Drinking and Wastewater Team will mobilize on August 30th to Corpus Christi to assist with drinking water and waste water field assessments. One Water Infrastructure team consisting of two TCEQ staff is slated to visit two systems based on information developed by the TCEQ/EPA call bank in Austin. EPA is supporting TCEQ in contacting drinking water and waste water systems. Region 6 deployed 10 personnel to assist TCEQ's Drinking Water and Waste Water Phone Bank located in Austin.

Conditions continue to be monitored at the Houston Northeast Water Purification Plant that is the largest water treatment plant in the city. Currently, the plant remains in operation and is maintaining sufficient pressure to keep the system charged and delivering water. The plant is experiencing flood conditions that may overtop the facility and no corrective action can be taken should the facility overtop. The facility would have to go offline until the flood waters recede to allow for re-energizing. George Bush International Airport is dependent upon this facility. The State and FEMA are aware of the situation and will support and provided assets as needed to support the facility.

Drinking Water Operational Status

Current Status: Operational status codes best describe the condition of the system at the time of the current assessment.

Status Code	Status Detail	Status Code Description	Number of Systems*
OK	No problems	Normal power was never lost (or was restored before pressure loss) AND System never lost treatment.	368
CLEAR	Lifted BWN due to neg. BacT samples. Normal operations resumed	BW lifted – negative BacT results. System has returned to normal operations, on grid power and with treatment. CLEAR code used when sampling has been used to lift BWN, otherwise OK code is used.	10
GENOK	On generator – never lost pressure	Currently operating on emergency power/generator but system never lost pressure and/or treatment (generator wear out/refueling concerns).	17
GENLP	On generator – lost pressure	Currently operating on emergency power/generator and system lost pressure and/or treatment before getting emergency power (contamination concerns).	4
LP/LT	Lost pressure & or Treatment	System on grid power but has lost pressure and or treatment and has not been able to lift BWN.	37
RESULTS	BacT sample results pending	System functional, flushed and BacT samples collected to clear BWN.	5
INOP	Not Operating	Contact made with system. System is offline & or unable to maintain required pressure and/or treatment.	40
SITE	Site visit needed	Contact attempted at least 3 times over 3 days by phone. Site visit to be conducted.	1
OUT	Out of Contact	Contact attempted by phone but system is unreachable; will call again.	22
NO STATUS	No Status Available	No Contact made.	4008
*Total number of systems from 50 TX counties tracked in Response Manager system.			4512

Note: Codes that result in Red & Yellow will require additional follow up (phone or site). Blue codes require a site visit.

Water Operational Definition: All drinking water served to customers is treated to National Primary Drinking Water Standards and is moving through all parts of the distribution system at or above the state-required minimum pressure (20 psi or 35 psi for Harris County). The system is able to meet these requirements on a permanent basis in lieu of a temporary basis in response to the incident.

Boil Water Notice (BWN): A BWN is required any time a system drops below 20 psi at any point in the distribution system. A 24-hour public notification is required and a system must take bacteriological (BacT) samples once the minimum 20 psi can be consistently maintained. Bacteriological sample analysis must return an “absent” result indicating the sample is absent of bacteriological contamination.

Wastewater Operational Status

Current Status: Operational status codes best describe the condition of the system at the time of the current assessment.

Status Code	Status Detail	Status Code Description	Number of Systems*
OK	No Problems	WWTP and Collection system fully operational and on grid power	376
OpGen	WWTP and Collection on Generator	WWTP and/or Collection system is fully operational and on Generator Power or bypass pumps for lift stations (generator wear out/refueling concerns).	21
Pop	WWTP and Collection Partially Operational SSO	WWTP and/or Collection system partially operational – Sanitary Sewer Overflow (SSO) in collection system (public health concerns).	15
NonOp	WWTP and Collection non-operational no SSO	WWTP and/or Collection system non-operational – No Sanitary Sewer Overflow.	26
SITE	Site Visit Needed	Contact attempted at least 3 times over 3 days by phone. Site visit to be conducted.	0
OUT	Out of Contact - phone eval only	Contact attempted by phone but system unreachable; will call again.	3
NO STATUS	No Status Available	No Contact made.	2028
*Total number of systems from 50 TX counties tracked in Response Manager system.			2469

Note: Codes that result in Red & Yellow will require additional follow up (phone or site). Blue codes require a site visit.

Wastewater Operational Definition - All domestic wastewater collected, treated then discharged or land applied is permitted through the Texas Pollution Discharge Elimination System (30 TAC 305 rules) and discharges are required to meet the standards set by the Texas Surface Water Quality Standards and the Federal Clean Water Act. The wastewater collection and treatment system is able to meet these requirements on a permanent basis in lieu of a temporary basis in response to the incident. This definition does not include "onsite wastewater treatments systems" regulated under 30 TAC 285

Fuel Waivers:

EPA has waived requirements for reformulated gasoline and low volatility gasoline through September 15 in the following states: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania, Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia; all midwestern states located in PADD 2 - Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, Oklahoma, Tennessee, and Wisconsin; and all Gulf coast states located in PADD 3 – Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas.

Harvey Related Fuel Waiver Requests

Affected State	Waiver Request	Date Received	Status Talking Point	Waiver Repsonse
Reid Vapor Pressure Requirements Waivers				
Texas	Letter from TCEQ requesting a waiver of the RVP, RFG and TxLED standards in the Governor's Disaster Proclamation	8/25/17	Granted on 8/25/17	https://www.epa.gov/enforcement/eastern-and-coastal-texas-fuels-waiver
Georgia	Amended letter from Georgia Department of Natural Resources for Atlanta RVP to waive 7.8 RVP requirement to 11.5 RVP	8/29/17	Granted on 8/29/17	https://www.epa.gov/enforcement/louisiana-fuels-waiver
Louisiana	Letter from Louisiana governor requesting a waiver of the low RVP requirements.	8/28/17	Granted on 8/28/17	https://www.epa.gov/sites/production/files/2017-08/documents/louisianafuelswaiver082817.pdf
Dyed NRLM Diesel Fuel Waiver				
Texas	Letter from Texas Comptroller requesting a waiver of using dyed NRLM diesel fuel in motor vehicles.	8/29/17	Granted on 8/29/17	https://www.epa.gov/enforcement/texas-diesel-waiver
Low Volatility Conventional Gasoline and Reformulated Gasoline (RFG)				

Affected State	Waiver Request	Date Received	Status Talking Point	Waiver Repsonse
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania, Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia; all mid-western states located in *PADD 2 - Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, Oklahoma, Tennessee, and Wisconsin; and all Gulf coast states located in PADD 3 – Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas	Issuance of waivers based on requests for the allowance of regulated parties within the listed states to produce, sell, or distribute conventional winter gasoline (including BOBs) with an RVP of 11.5 psi before the addition of any ethanol in any RFG covered area	8/30/17	Granted on 8/31/17	https://www.epa.gov/enforcement/second-multi-state-fuels-waivers

***PADD: Petroleum Administration for Defense Districts**

Other EPA Response Actions:

Data Management: Two Data Team members have been deployed and are expected to arrive in Corpus Christi by September 1. Region 6 will provide technical support to state regulatory agencies both at the GLO and TCEQ to gather data and information in Response Manager, a systemized response data management system.

Communications:

An EPA HQ Public Information Officer (PIO) is fully integrated into the Department of Homeland Security and FEMA communication structure and management, and participates in the daily National Incident Communication Conference Line (NICCL) call. EPA has initiated its Crisis Communication Plan to ensure rapid response to providing coordinated, accurate, up-to-date information regarding its field activities. EPA's Public Information Office will be established in Dallas with forward field components as needed to support the HQ Office of Public Affairs.

EOC PIO is currently working with program offices and OPA to review and approve fact sheets on a variety of topics related to EPA's response activities. OPA plans to post the fact sheets to the response website as they get approved. Fact sheets prepared by OW and OLEM will be posted by August 31st. EOC PIO continues to work on review and approval of additional fact sheets provided by ORD, OCSPP and OAR / ORIA (Indoor Air Quality). We are also coordinating with FEMA / ESF-15 on external messaging and communications.

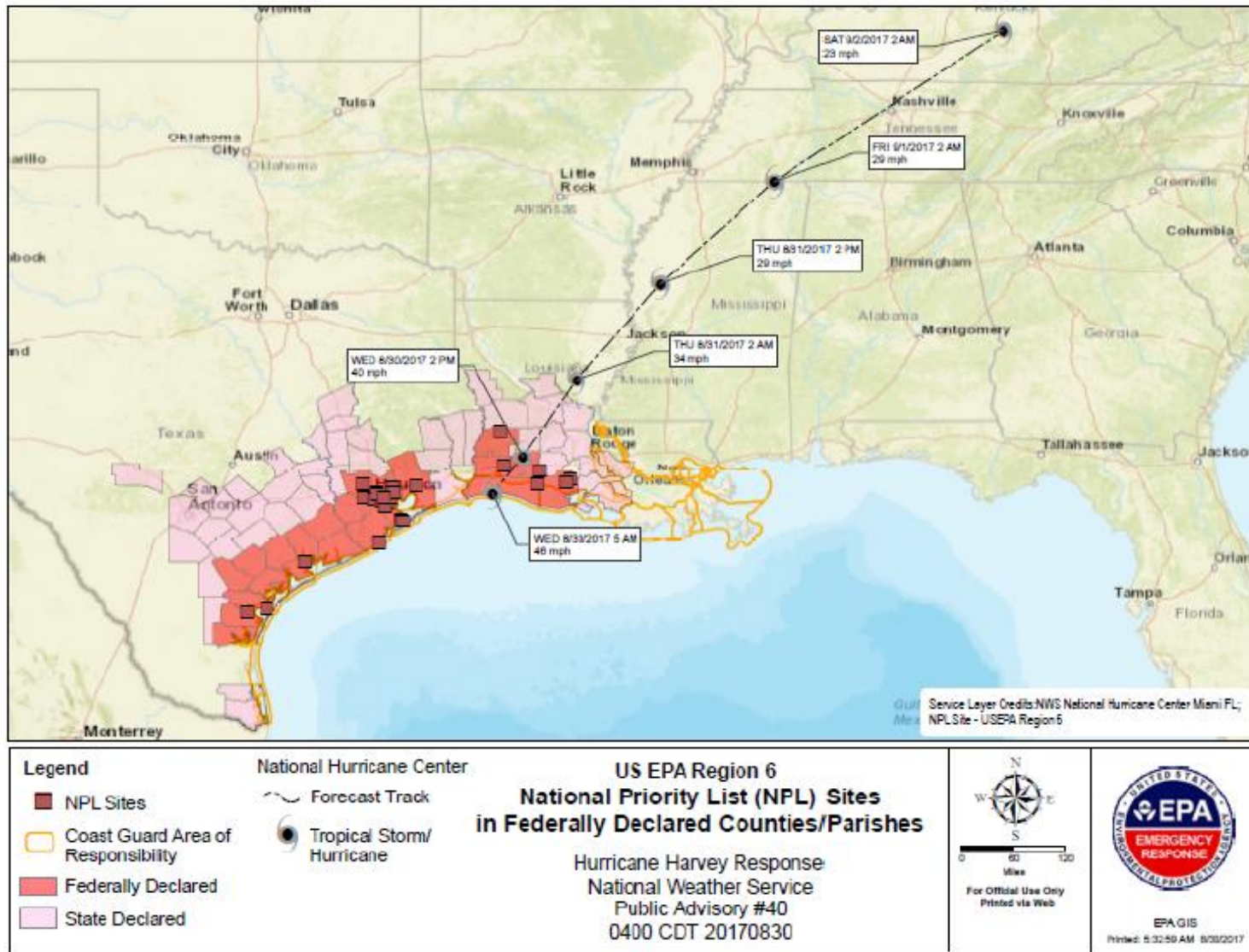
Superfund NPL Sites: EPA Remedial Managers will initiate follow-up activities at the 31 Superfund NPL sites within the storm path to conduct

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rapid damage assessments and determine if additional emergency cleanup activities are necessary.

Superfund Site Name	State	County
American Creosote Deridder	LA	Beauregard
Gulf State Utilities (North Ryan Street)	LA	Calcasieu
Mallard Bay Landing Bulk Plant	LA	Cameron
Sba Shipyard	LA	Jefferson Davis
Pab Oil & Chemical Service	LA	Vermilion
Gulf Coast Vacuum Services	LA	Vermilion
D.L. Mud, Inc.	LA	Vermilion
Gulfco Marine Maintenance	TX	Brazoria
Alcoa (Point Comfort) / Lavaca Bay	TX	Calhoun
Tex-Tin Corp.	TX	Galveston
Motco, Inc.	TX	Galveston
Malone Services Company	TX	Galveston
Sikes Disposal Pits	TX	Harris
French, Ltd.	TX	Harris
Highlands Acid Pit	TX	Harris
North Cavalcade Street	TX	Harris
South Cavalcade Street	TX	Harris
Crystal Chemical Co.	TX	Harris
Sol Lynn / Industrial Transformers	TX	Harris
Geneva Industries / Fuhrmann Energy	TX	Harris
Harris (Farley Street)	TX	Harris
Brio Refining Inc.	TX	Harris
Dixie Oil Processors Inc.	TX	Harris
Many Diversified Interests, Inc	TX	Harris
Patrick Bayou	TX	Harris
Jones Road Groundwater Plume	TX	Harris
San Jacinto River Waste Pits	TX	Harris
Us Oil Recovery	TX	Harris
Petro-Chemical Systems, Inc. (Turtle Bayou)	TX	Liberty
Brine Service Co.	TX	Nueces
Falcon Refinery	TX	San Patricio

Superfund National Priority List (NPL) Sites in Federally Declared Counties



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